

HALLIBURTON

CEMENT BOND LOG  
GR-CCL

Company				URSA OPERATING COMPANY			
Well				B&V 21A-18-07-95			
Field				WILDCAT			
Company		URSA OPERATING COMPANY		State		CO	
Well		B&V 21A-18-07-95		State		CO	
Field		WILDCAT		State		CO	
County		Garfield		State		CO	
API No.: 05-045-227110000				Serv #: 903925209		Other Services	
Location:				SHL: 1887' FSL & 532' FWL BHL: 248" FNL & 1900' FEL			
Sec: 7 Twp: 7S Rge: 95W				JB/GR			
Permanent Datum		Ground Level		Elevation		5084'	
Log Measured From		KB , 17 Ft. above perm. datum		K.B. 5101' D.F. 5102' G.L. 5084'			
Drilling Measured From		KB		K.B. 5101' D.F. 5102' G.L. 5084'			
Date @ Time Logged		26-MARCH-2017		Type Fluid in Hole		FRESH WATER	
Run No.		ONE		Density of Fluid		8.4 PPG	
Depth - Driller		7016 FT		Fluid Level		FULL	
Depth - Logger		6900 FT		Cement Top Est. Logged		N/A	
Bottom - Logged Interval		6890 FT		Equipment / Location		11808537 / RS	
Top - Log Interval		1800 FT		Recorded by		Pedro Gonzalez Baqueroiro	
Max. Recorded Temp.		196 °F		Witnessed by		Luke Grieger	
CEMENTING DATA		Surface		Protection		Liner	
Date / Time Cemented		String		String		String	
Primary / Squeeze							
Expected Compressive Strength		psi@ hrs		psi@ hrs		psi@ hrs	
Cement Volume		psi@ hrs		psi@ hrs		psi@ hrs	
Cement Type / Weight		/		/		/	
Formulation							
Mud Type / Mud Wgt.		/		/		/	
Borehole Record							
Run Number		Bit		From		To	
ONE		24"		SURFACE		60"	
TWO		12.25"		SURFACE		1846"	
THREE		7.875"		SURFACE		7016"	
Casing & Tubing Record							

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HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

HES Cement Bond log First Run in to the Hole  
Log Correlated By KB 17'  
Log Interval Per Customer Request  
Log Ran in combo with RMTi tool

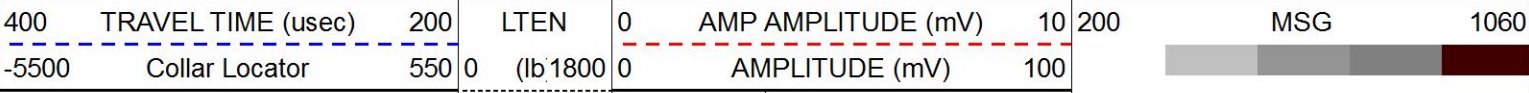
\*\*THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES ROCK SPRING WY\*\*

MAIN PASS

HALLIBURTON

5"=100'

Database File            c:\users\h182119\desktop\ursa b&v logs\first 12\b&v 21a-18-07-95\b&v 21a-18-07-95.db  
Dataset Pathname      WC/B&V\_21A18--07-95/run1/MIAN  
Presentation Format    Unknown  
Dataset Creation        Sun Mar 26 15:01:05 2017  
Charted by                Depth in Feet scaled 1:240

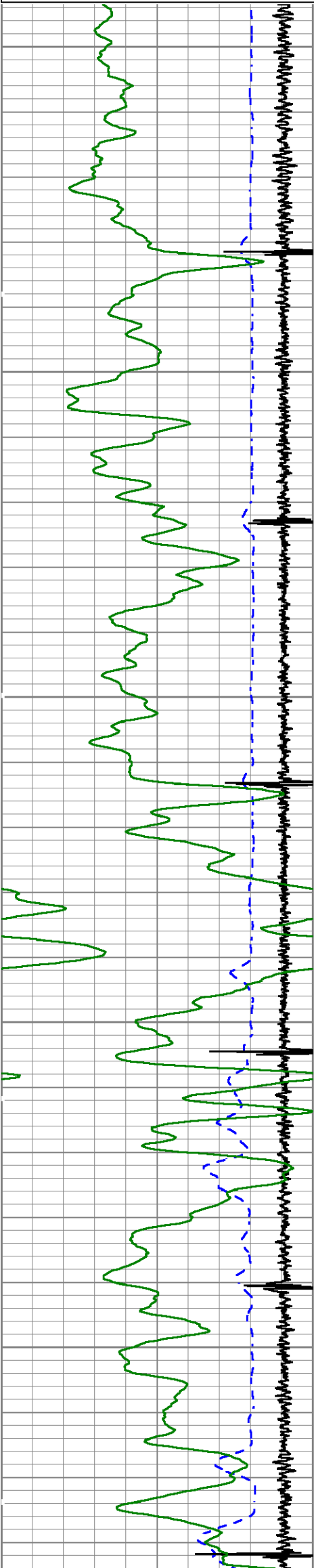


Gamma Ray (GAPI)

150

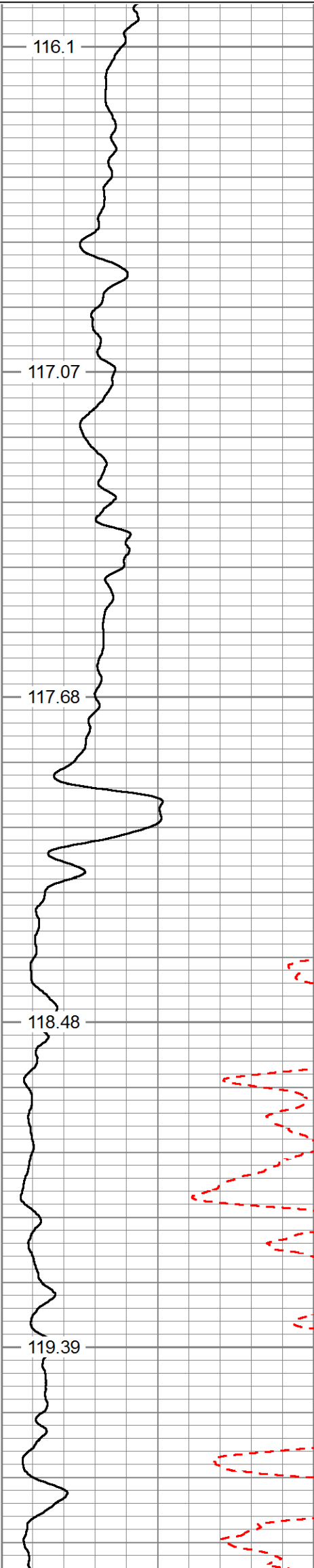
Cbll Temp

(degF)



1800

1900



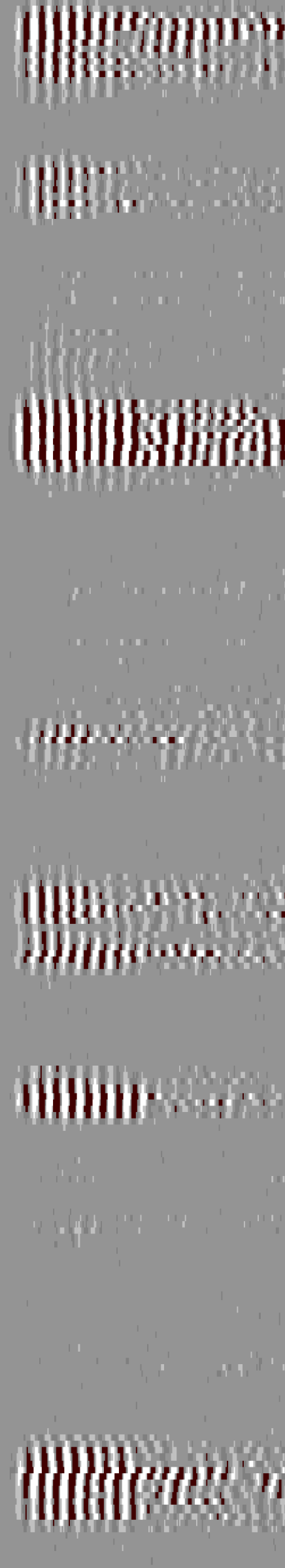
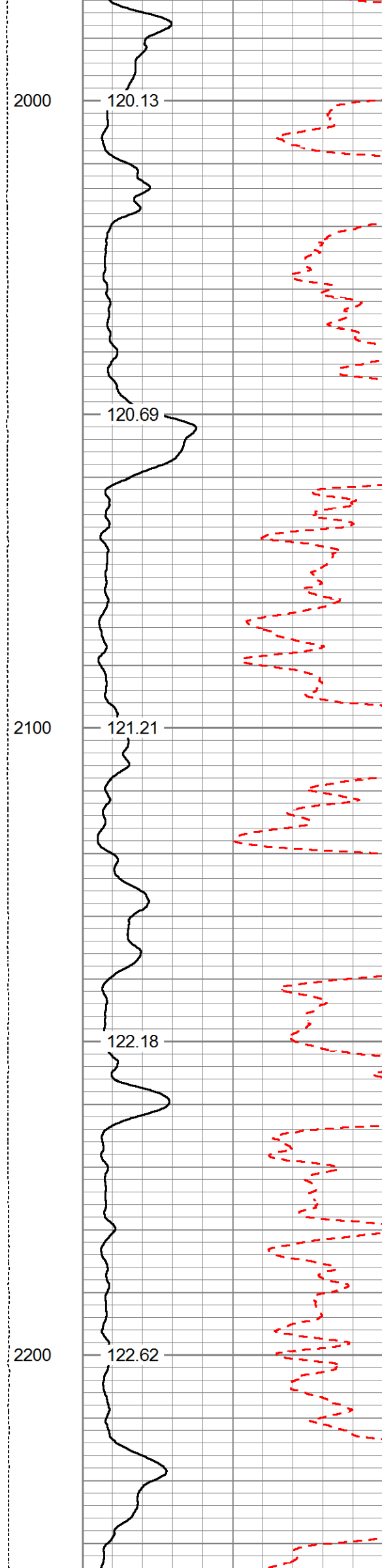
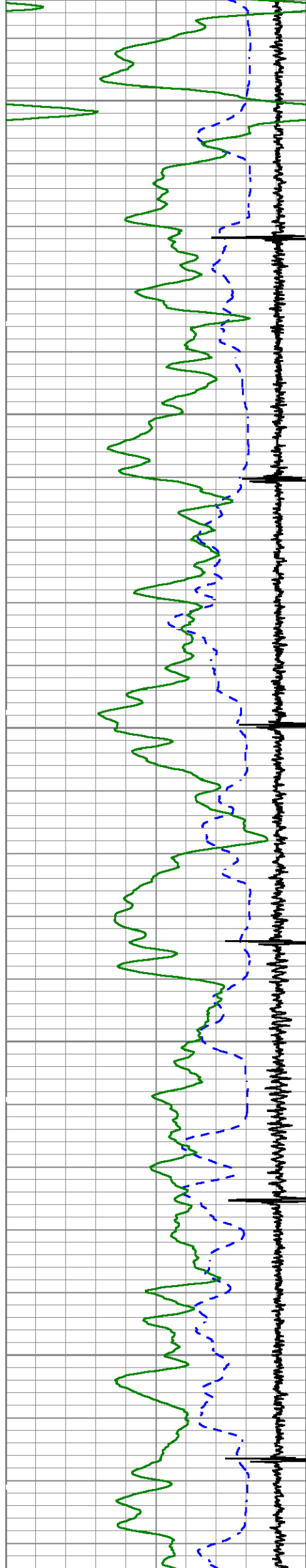
116.1

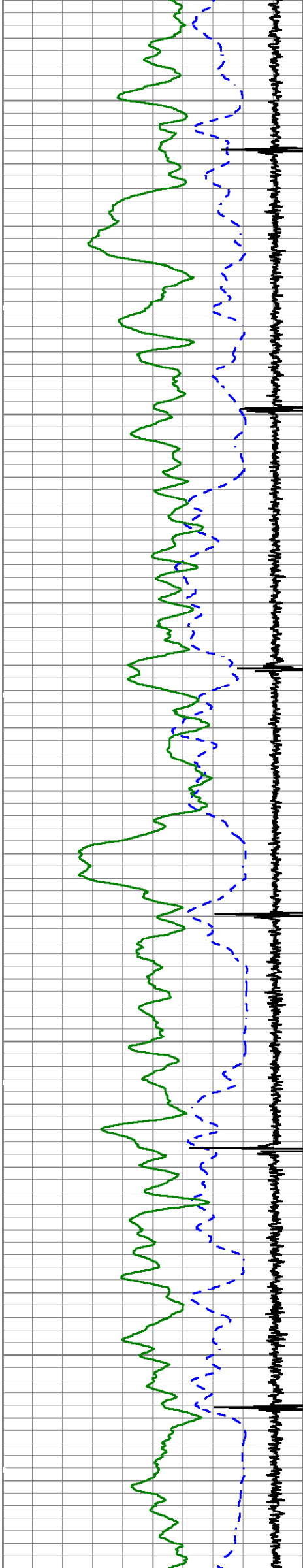
117.07

117.68

118.48

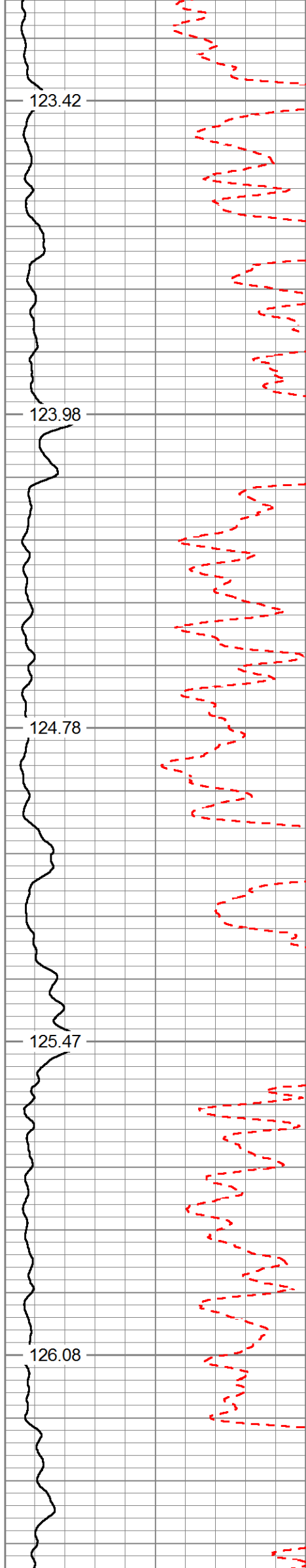
119.39





2300

2400



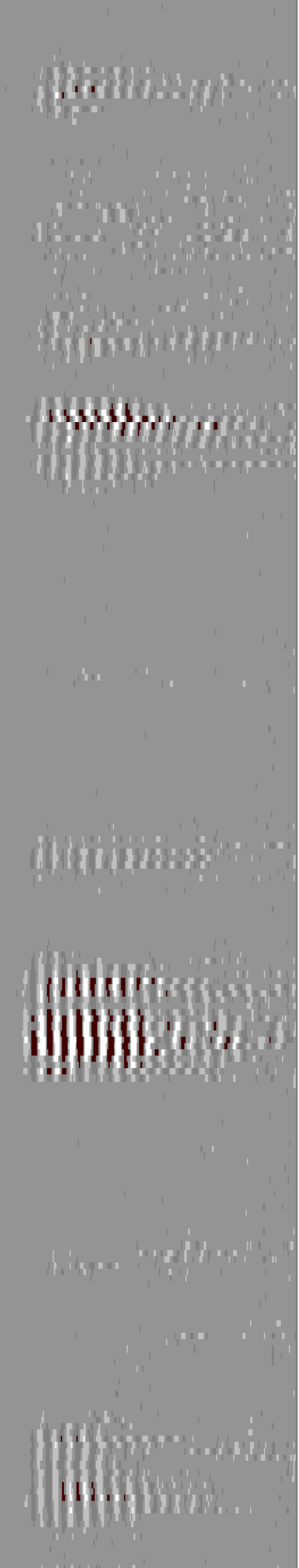
123.42

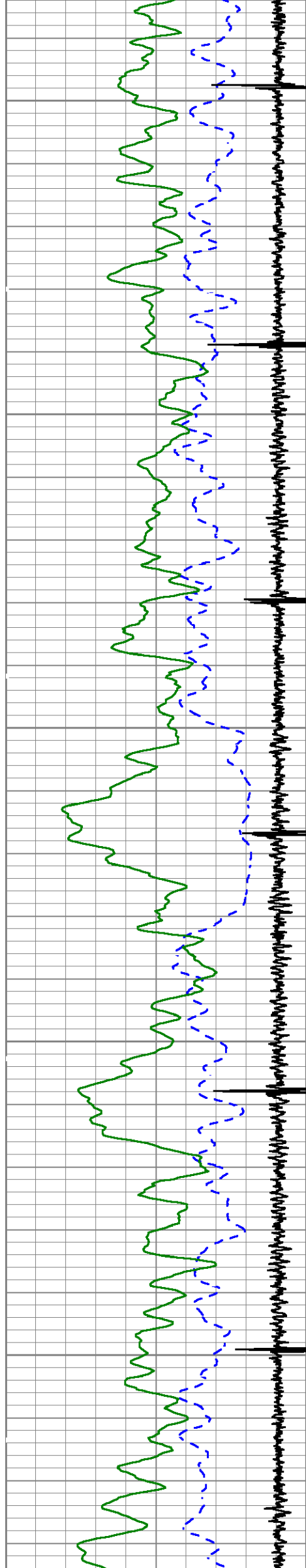
123.98

124.78

125.47

126.08





2500

2600

2700

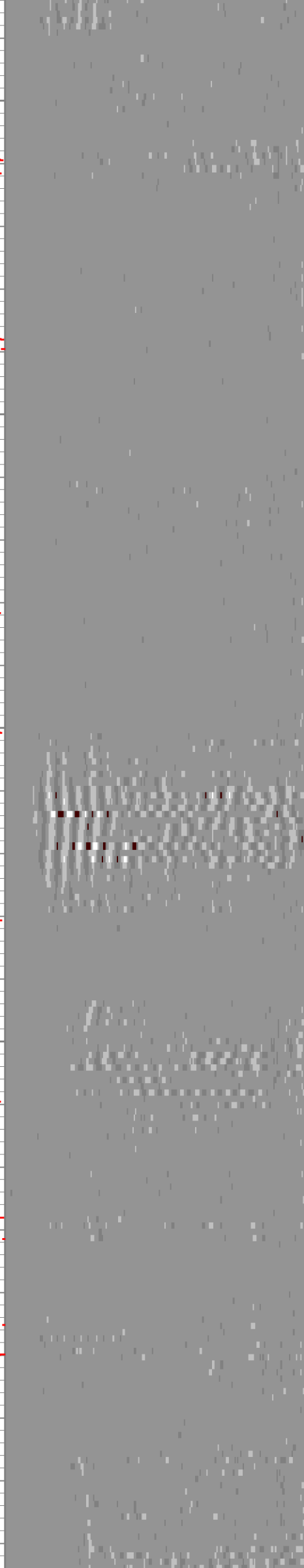
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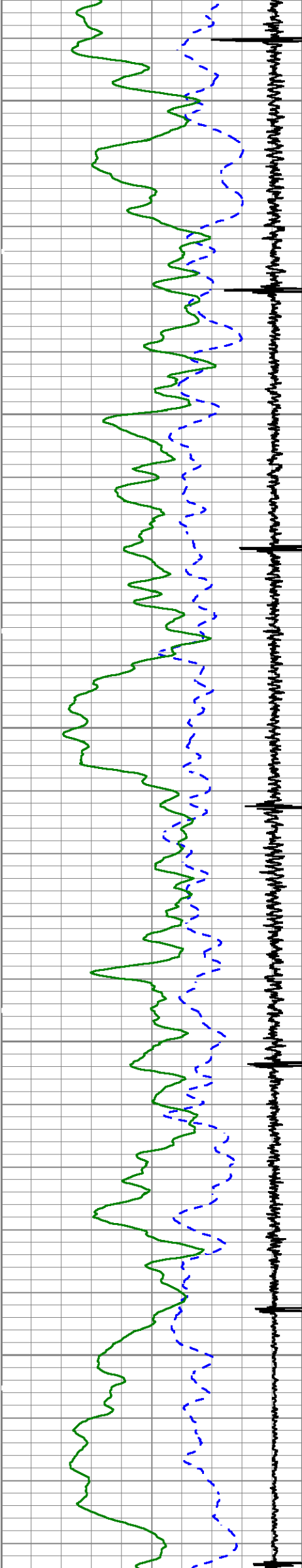
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127.95

128.7

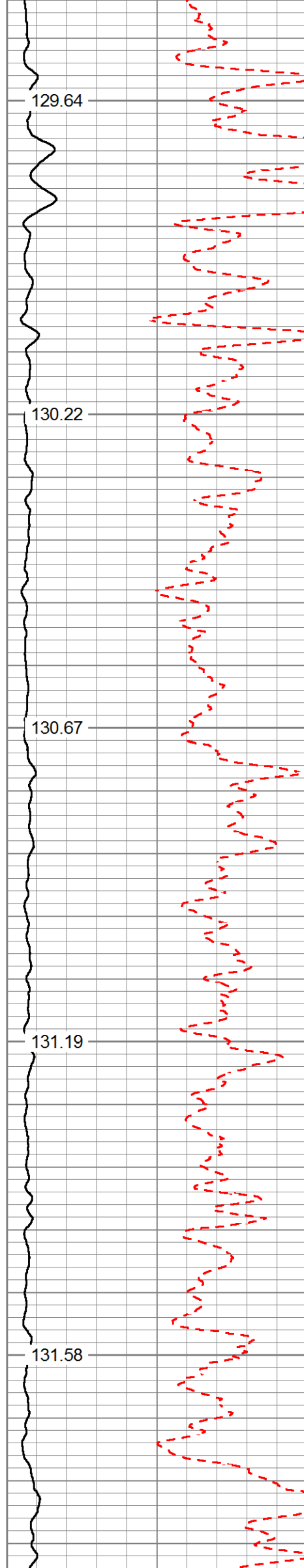
129.2





2800

2900



129.64

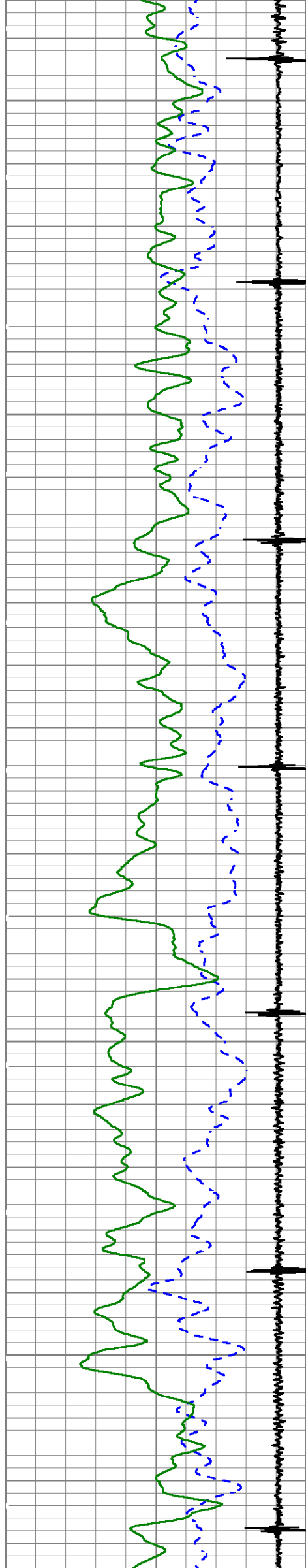
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130.67

131.19

131.58

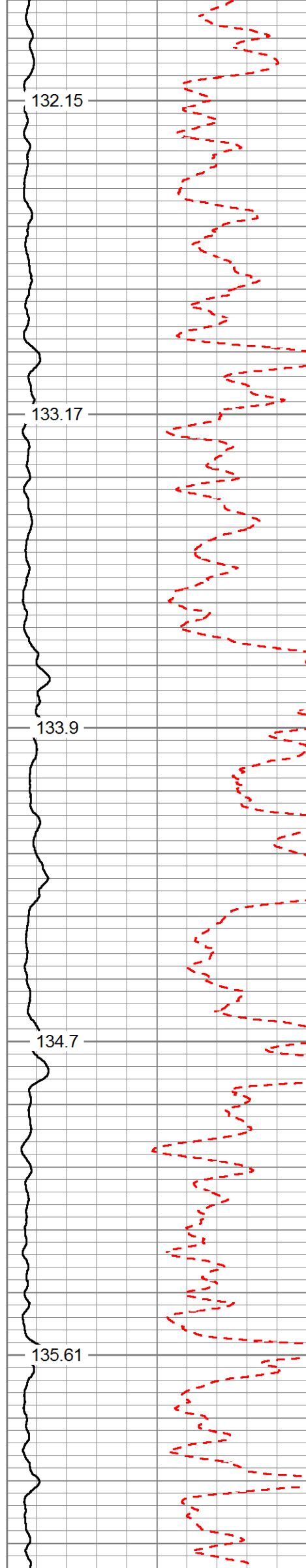




3000

3100

3200



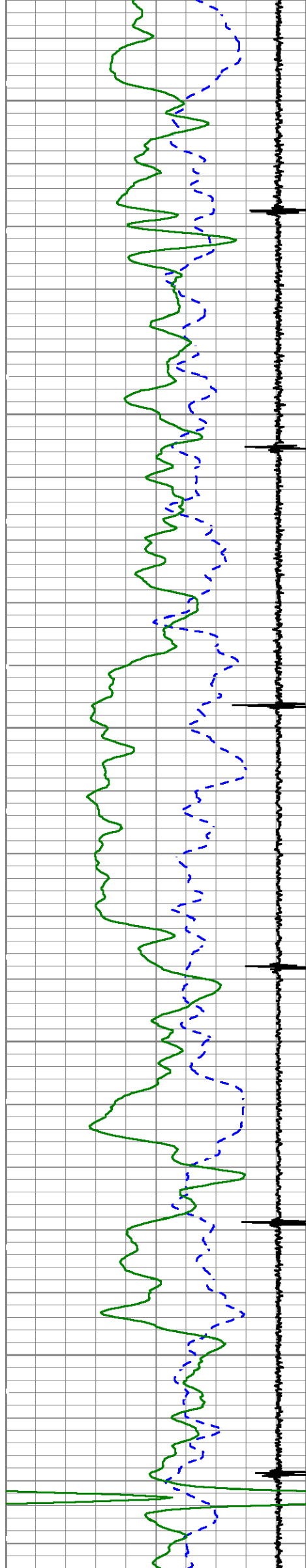
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133.17

133.9

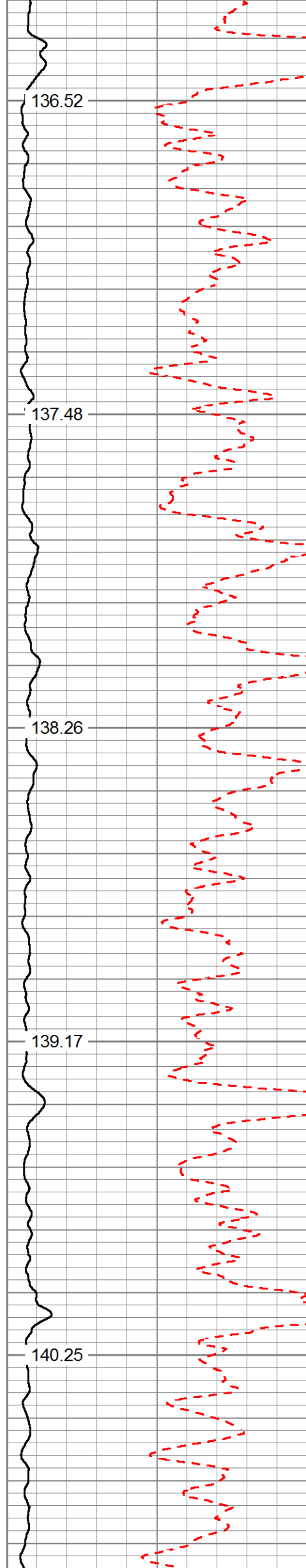
134.7

135.61



3300

3400



136.52

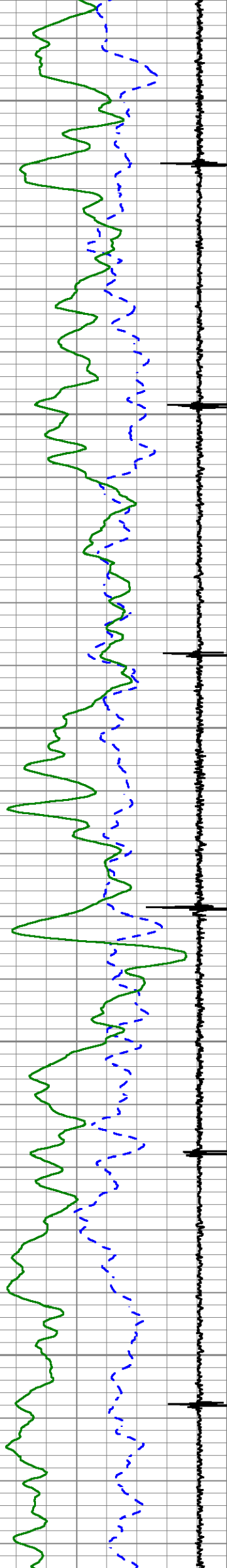
137.48

138.26

139.17

140.25





3500

3600

3700

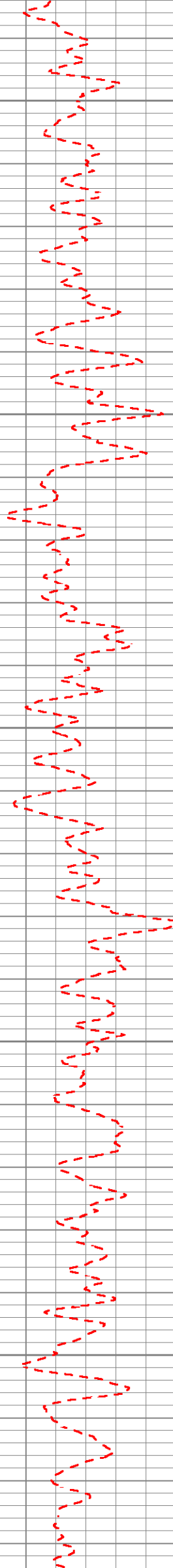
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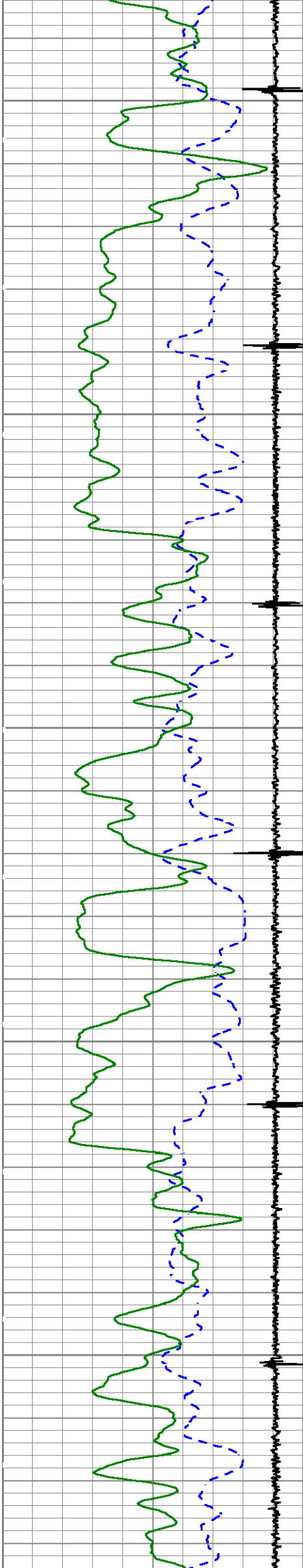
142.18

142.93

143.76

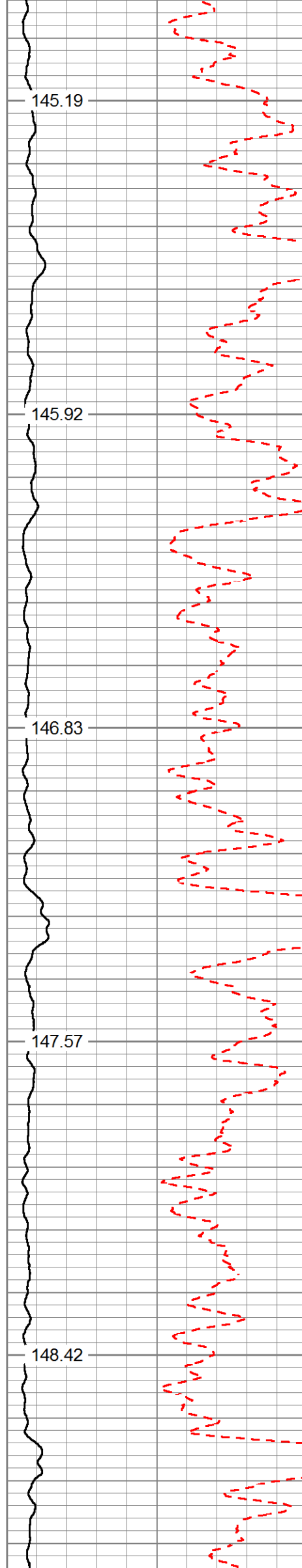
144.5





3800

3900



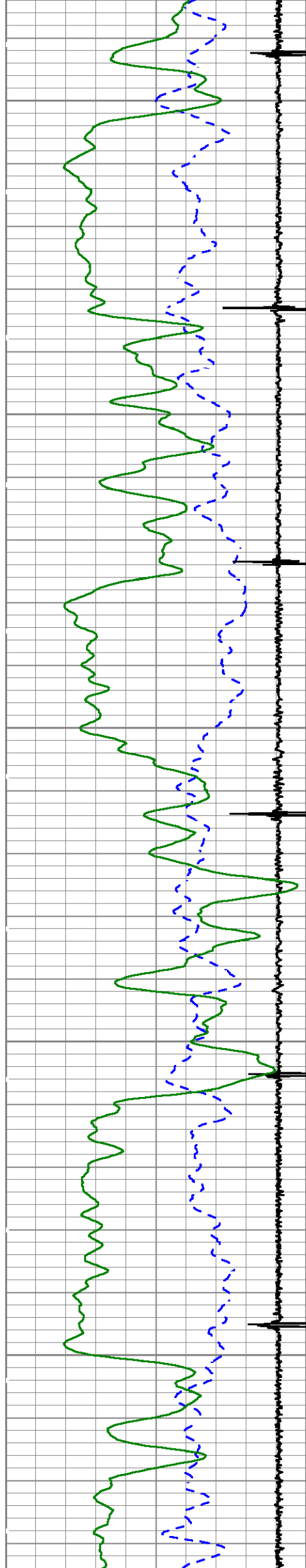
145.19

145.92

146.83

147.57

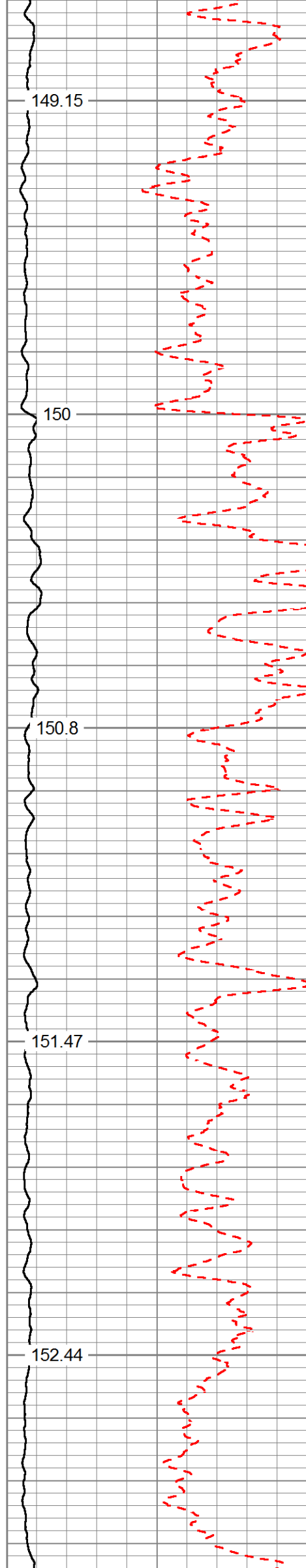
148.42



4000

4100

4200



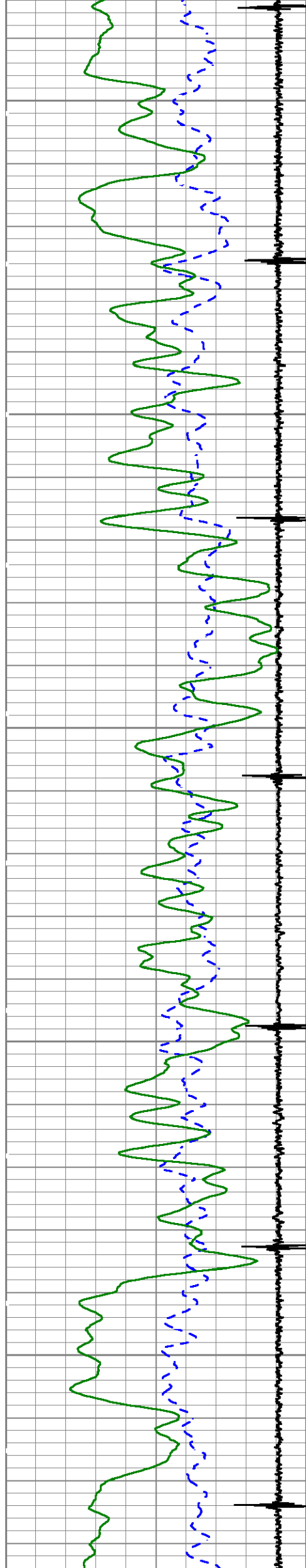
149.15

150

150.8

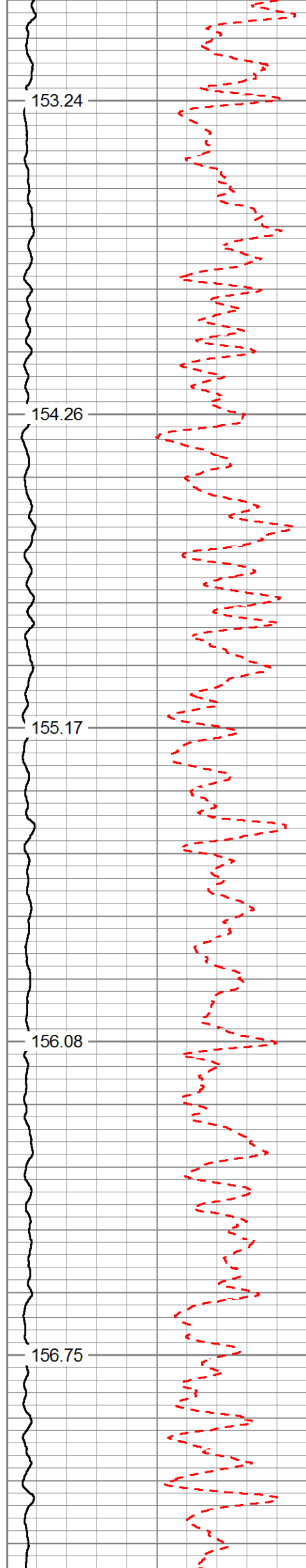
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152.44



4300

4400



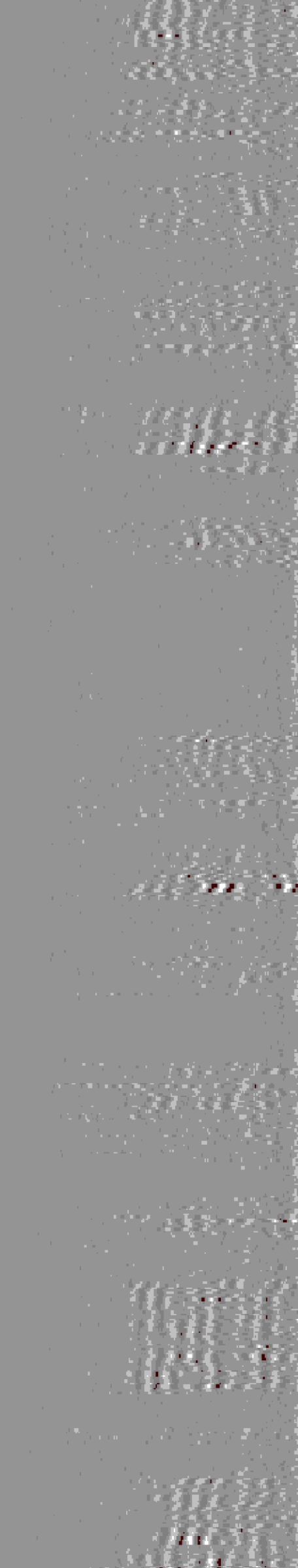
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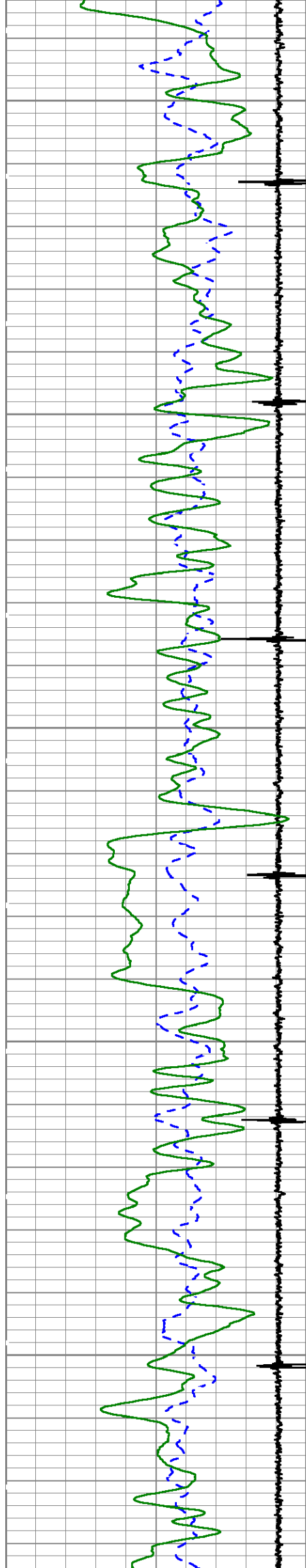
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155.17

156.08

156.75

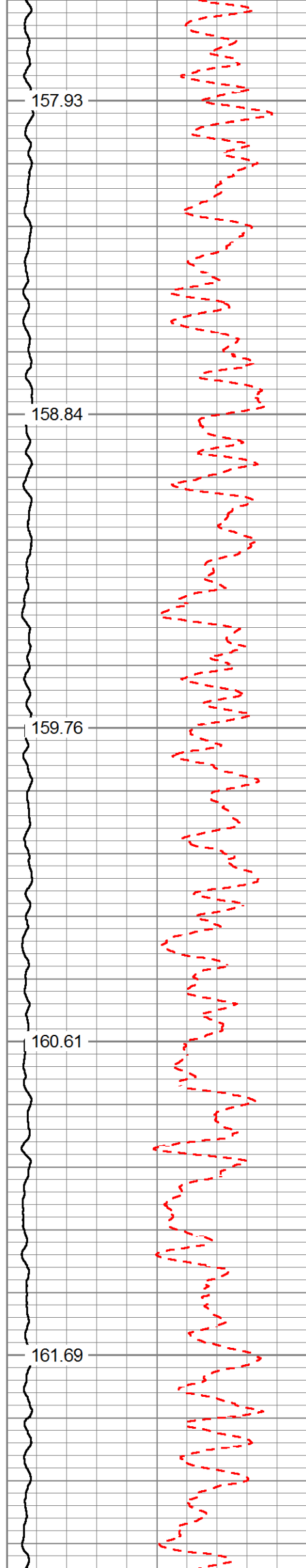




4500

4600

4700



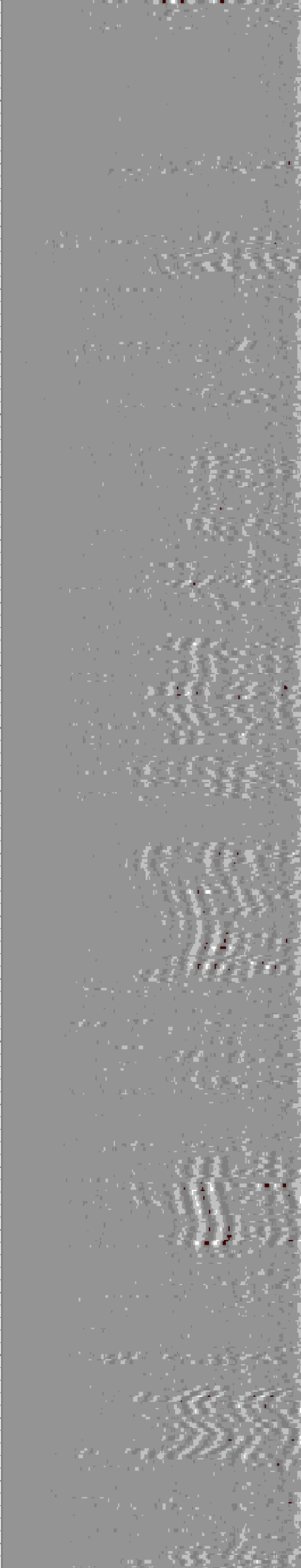
157.93

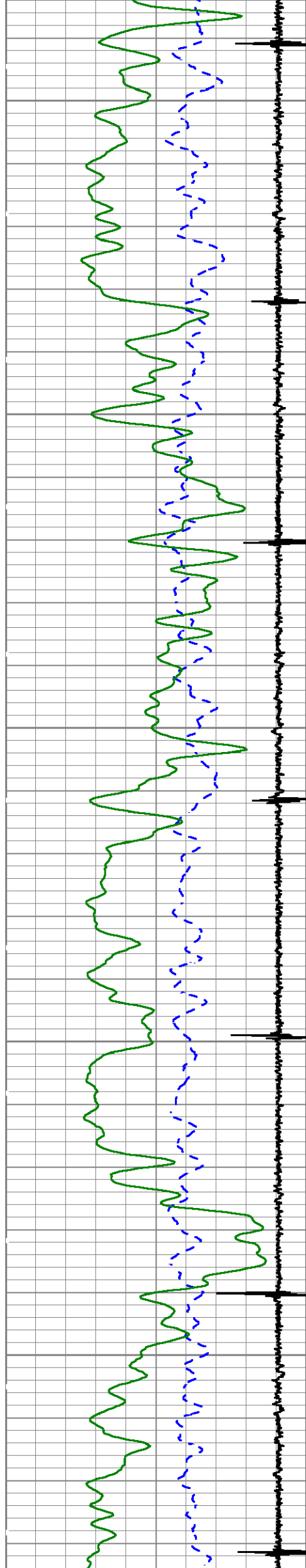
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159.76

160.61

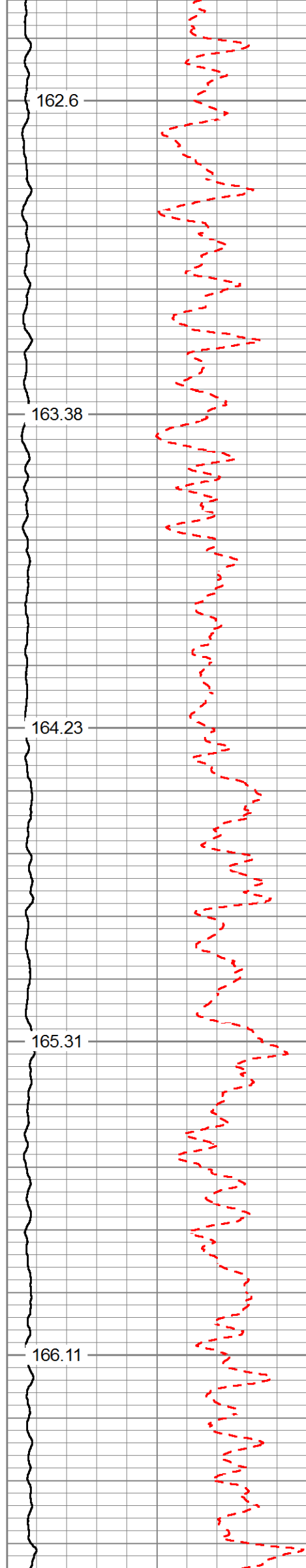
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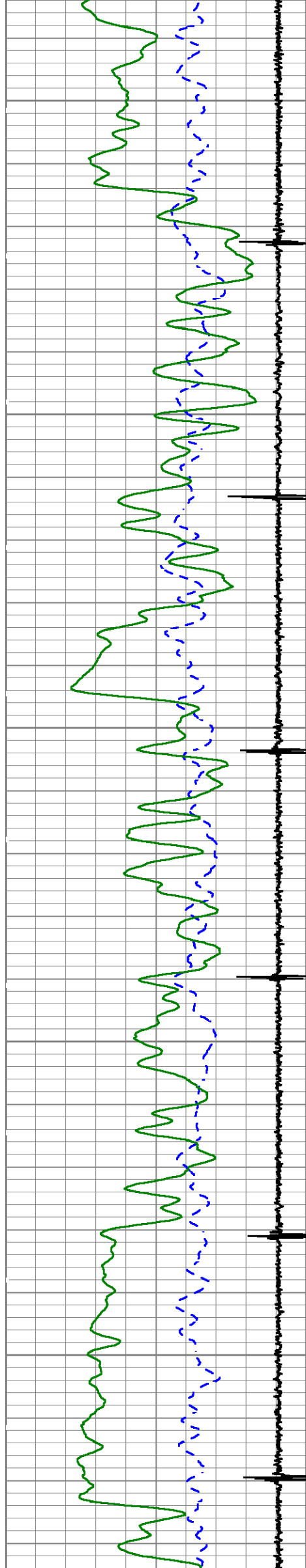


4800

4900



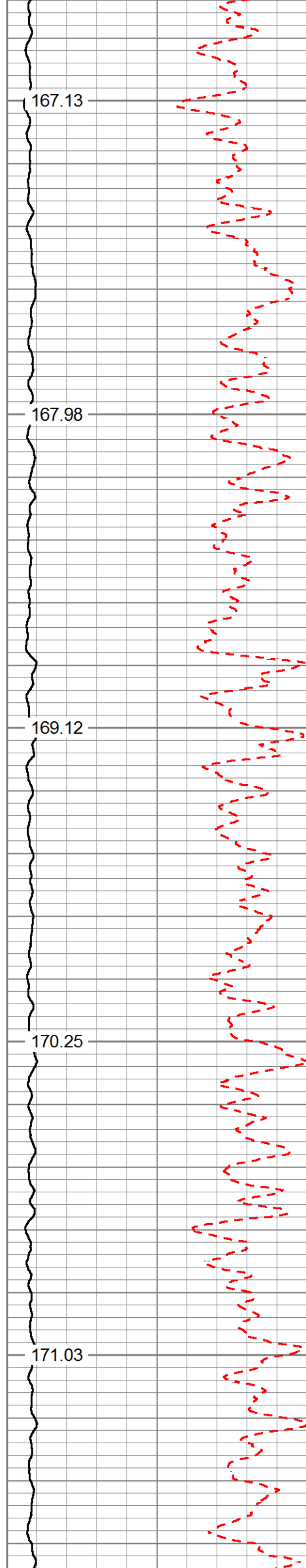




5000

5100

5200



167.13

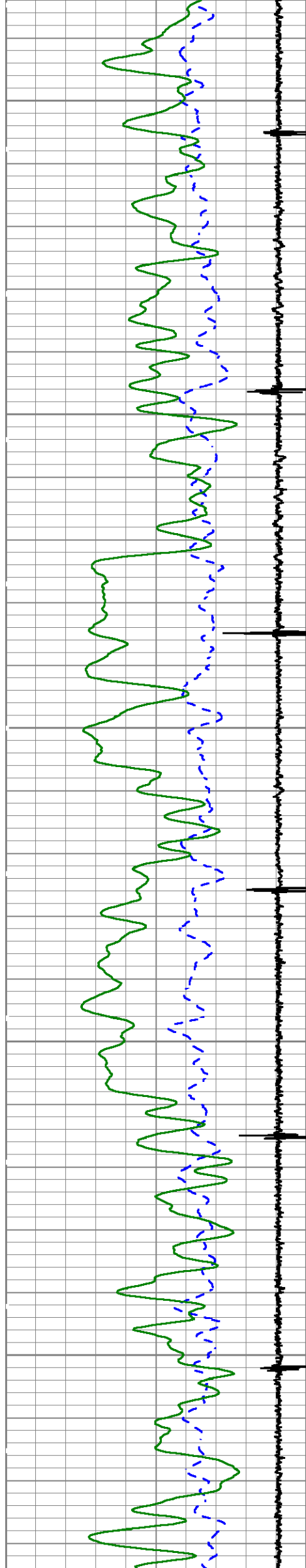
167.98

169.12

170.25

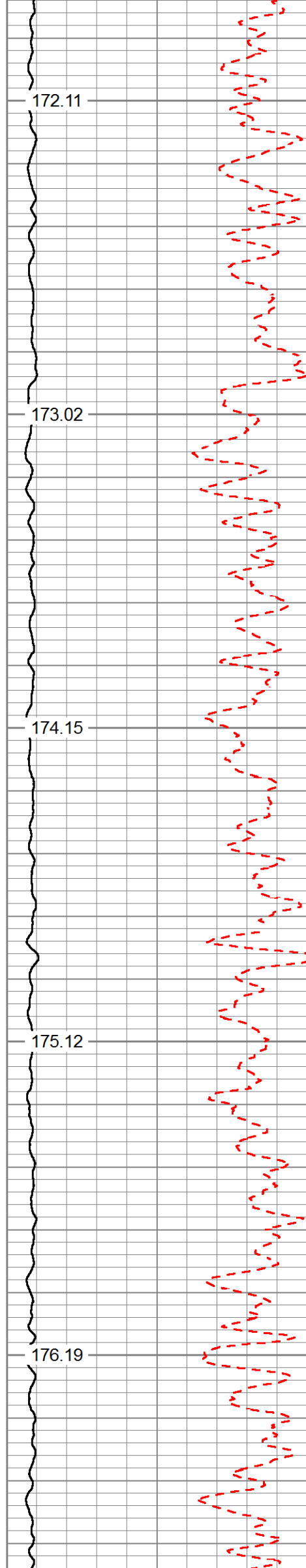
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5300

5400



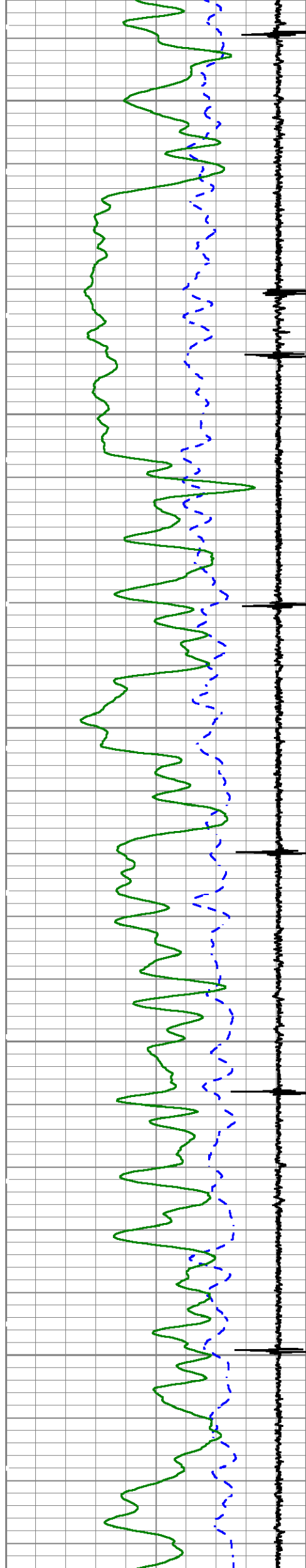
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173.02

174.15

175.12

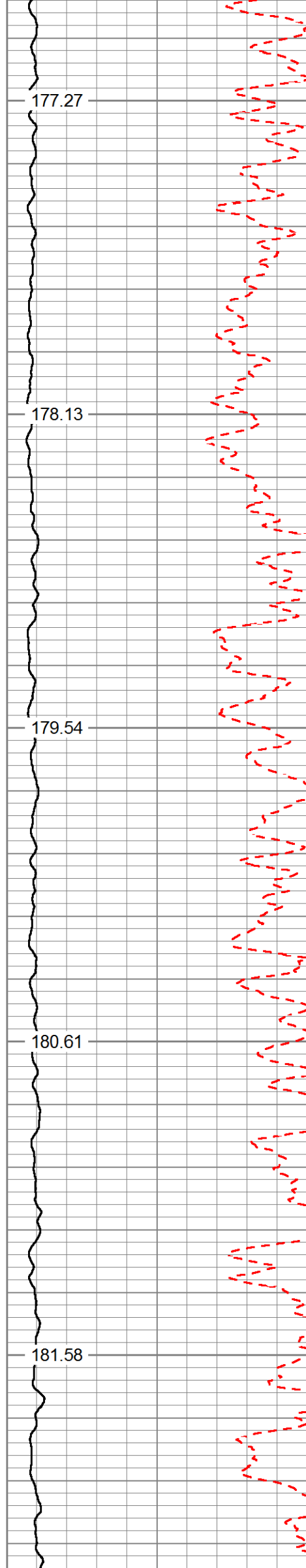
176.19



5500

5600

5700



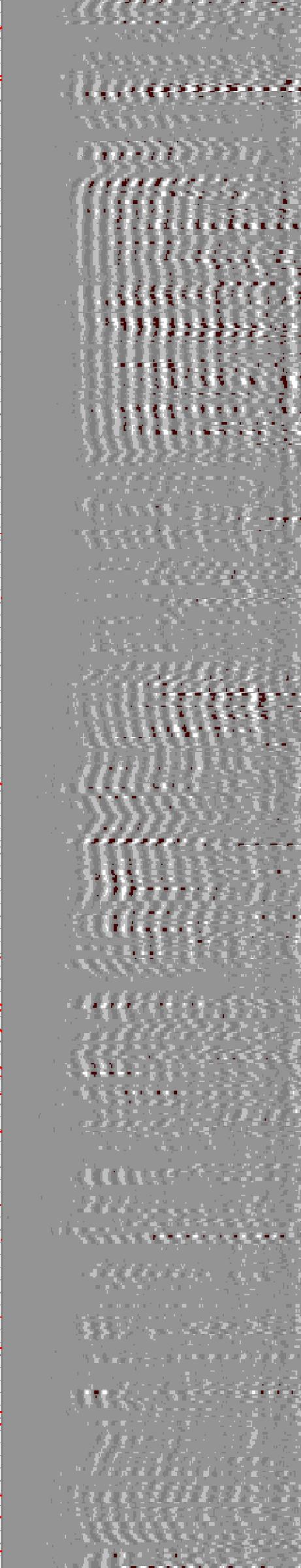
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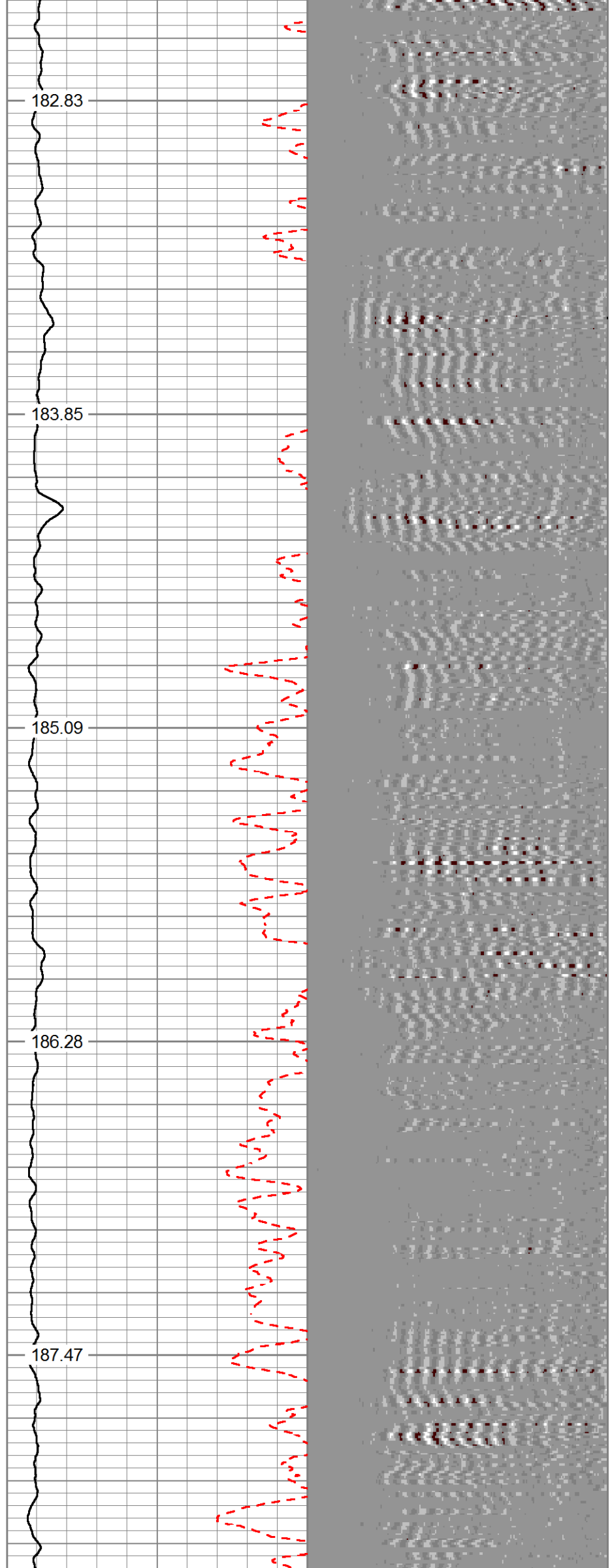
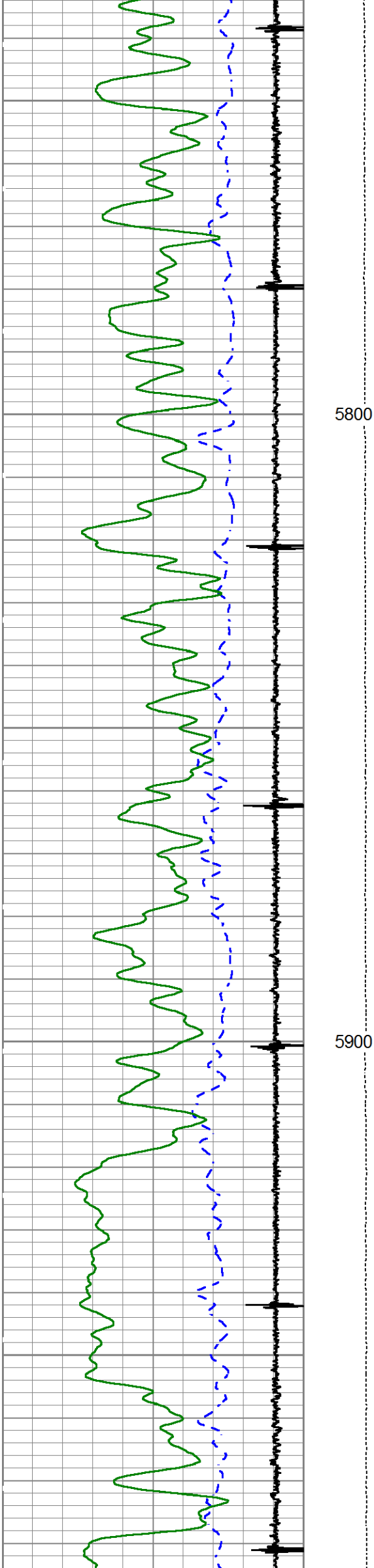
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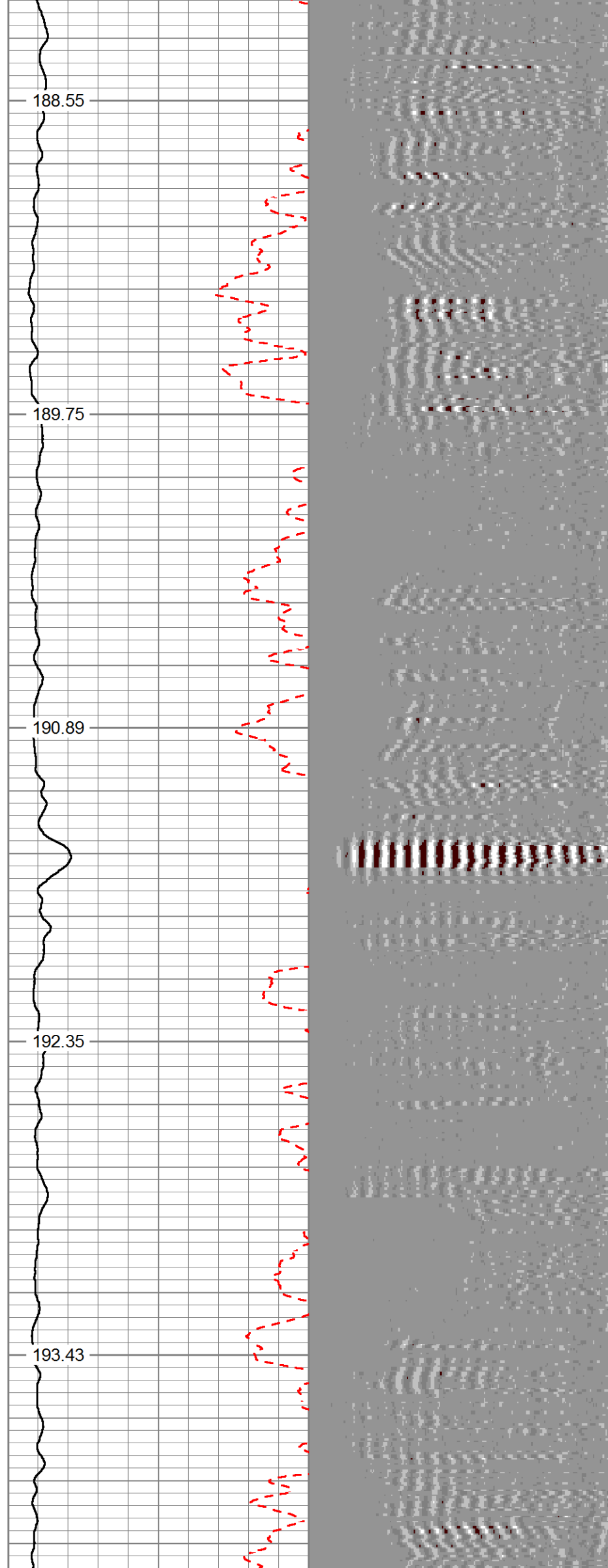
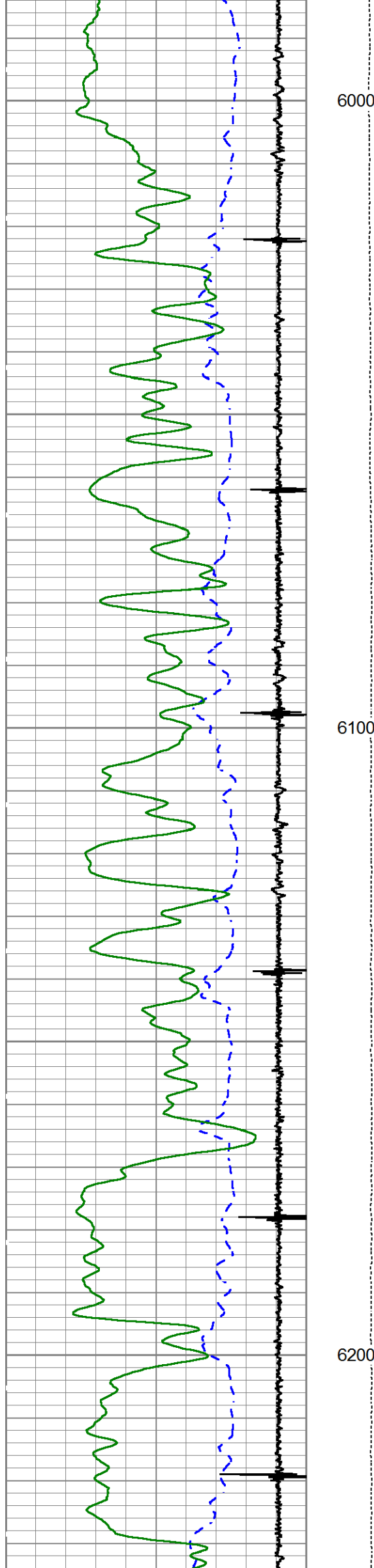
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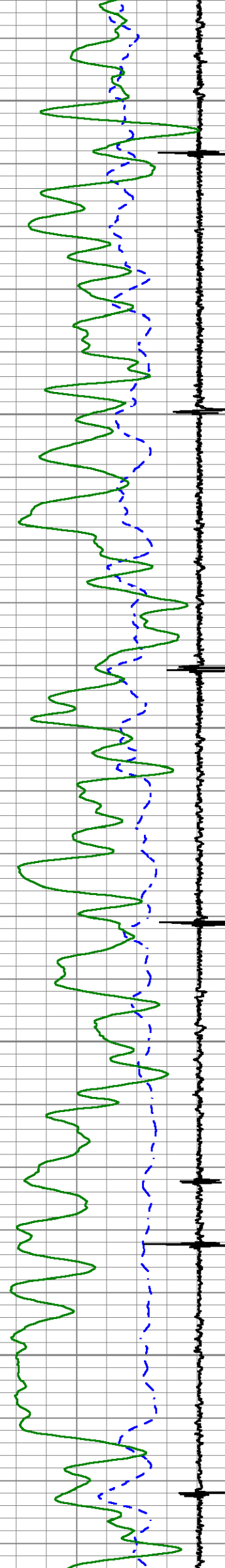
180.61

181.58



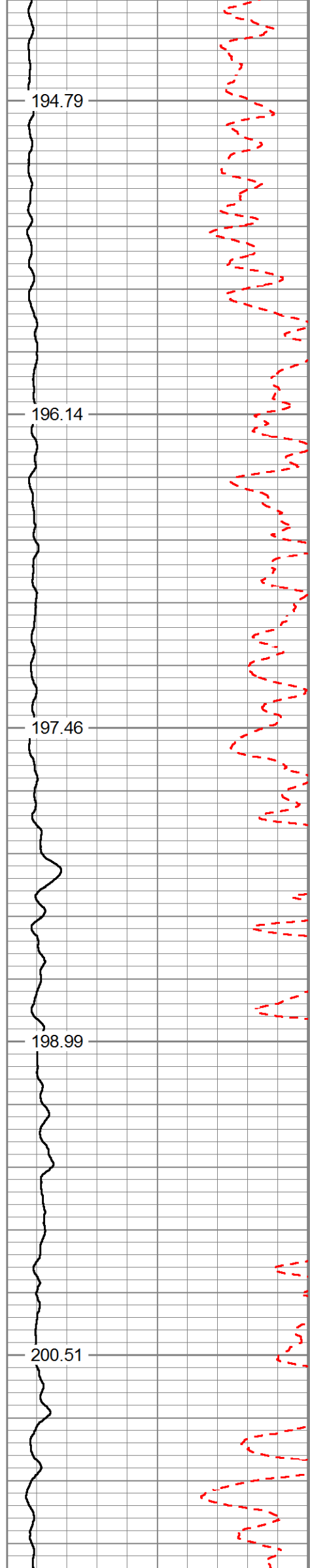






6300

6400



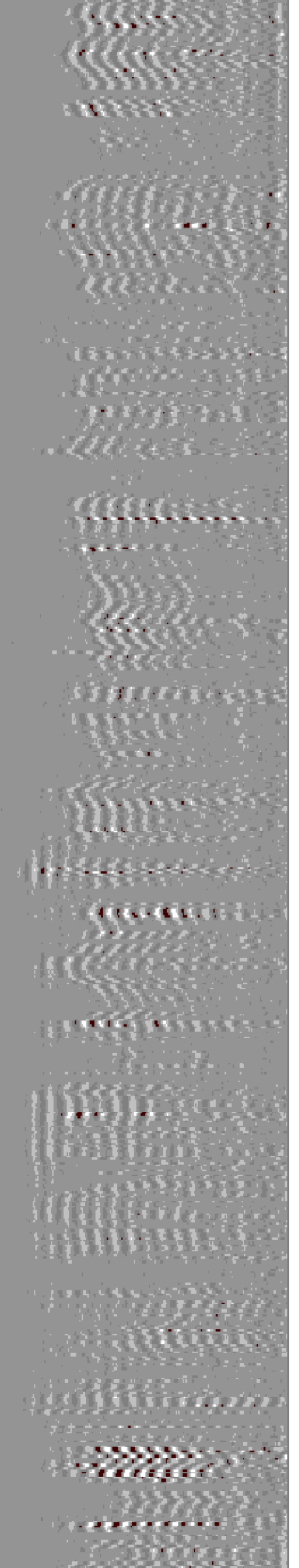
194.79

196.14

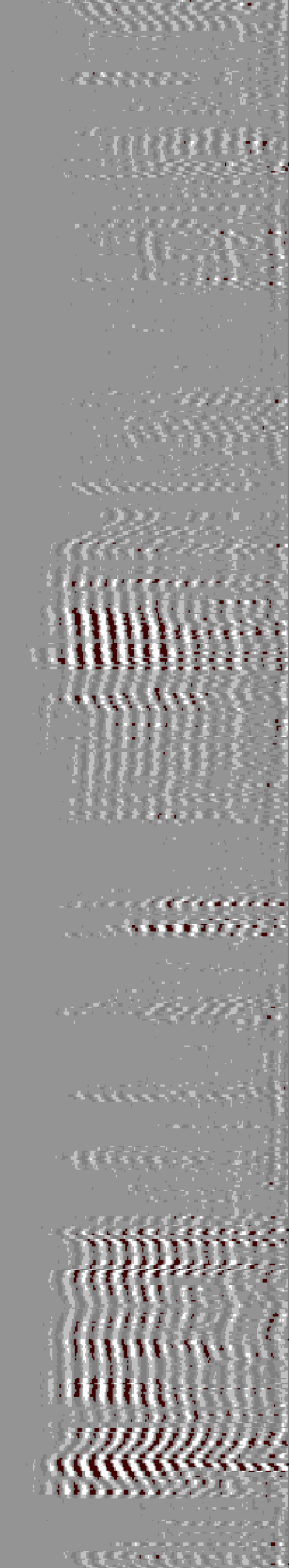
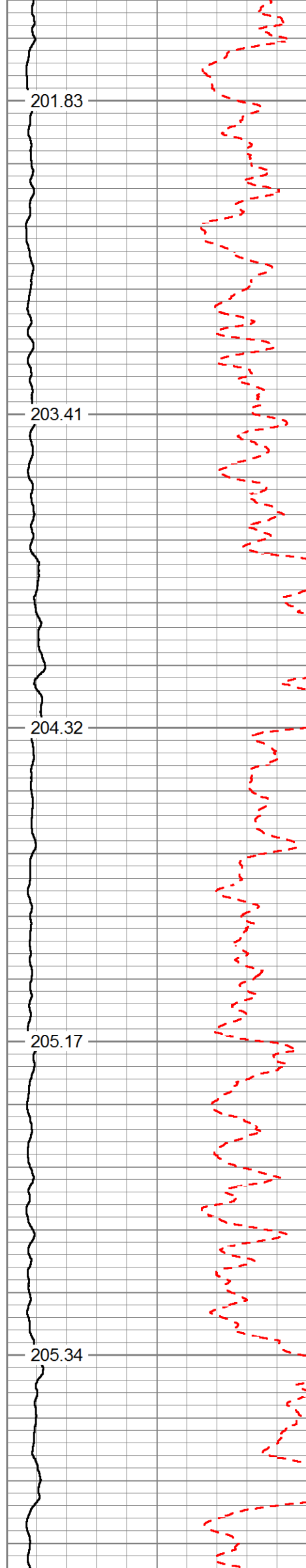
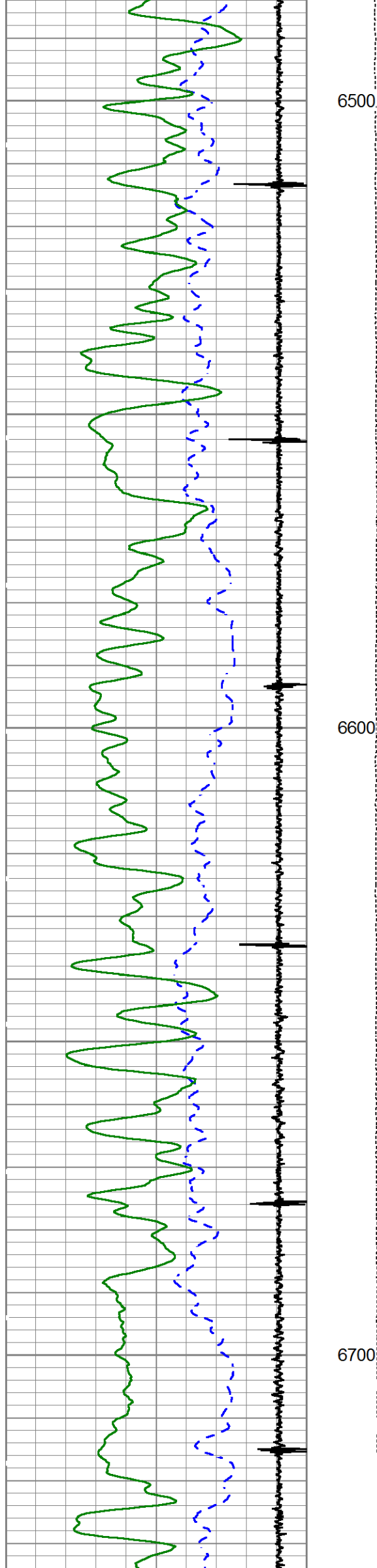
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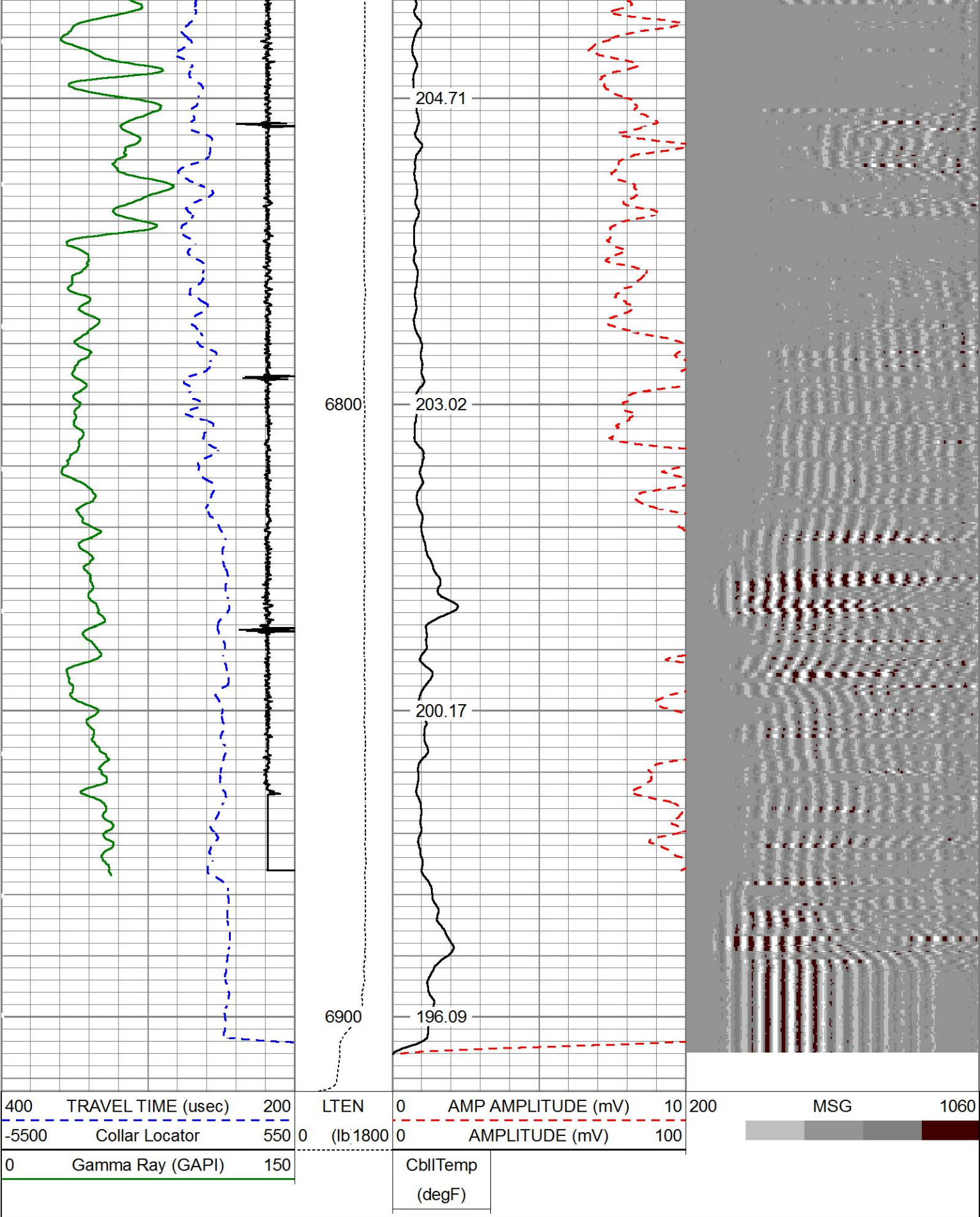
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200.51









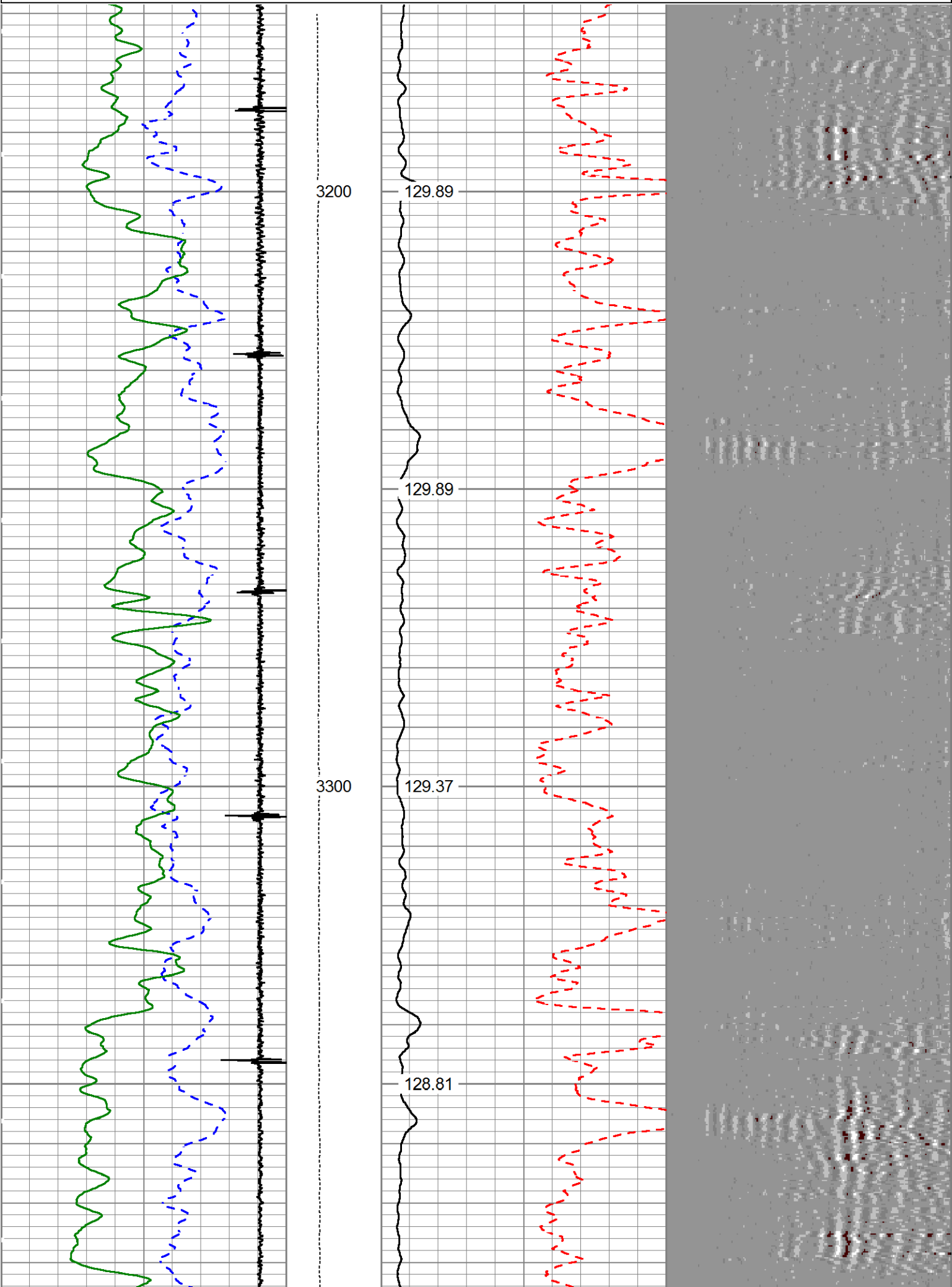
MAIN PASS

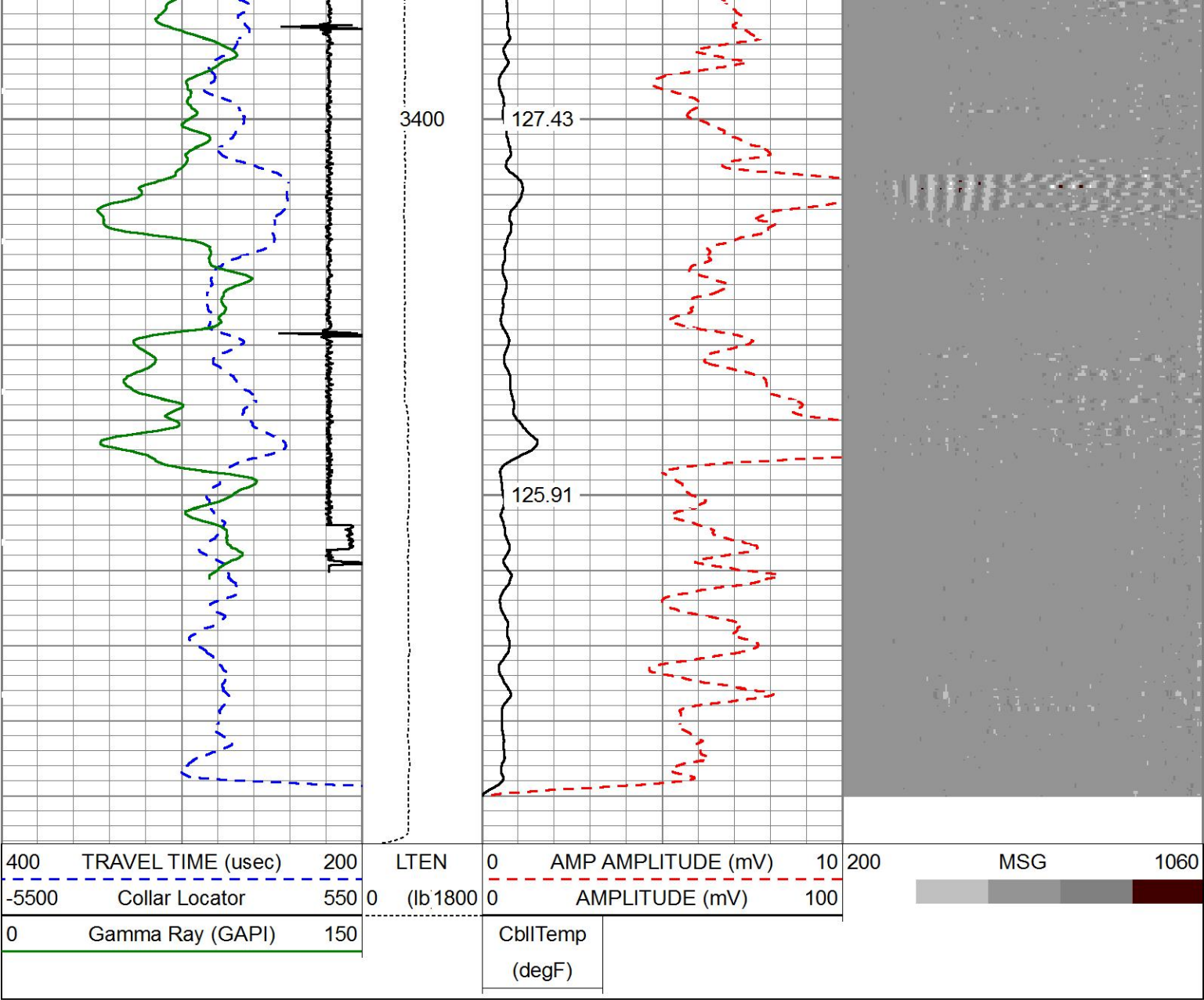
5"=100'

REPEAT PASS

5"=100'

400	TRAVEL TIME (usec)	200	LTEN	0	AMP AMPLITUDE (mV)	10	200	MSG	1060
-5500	Collar Locator	550	0 (lb 1800	0	AMPLITUDE (mV)	100			
0	Gamma Ray (GAPI)	150		CbllTemp					
				(degF)					





## REPEAT PASS

5"=100'

HALLIBURTON

### Calibration Report

Database File C:\Users\H182119\Desktop\URSA B&V LOGS\FIRST 12\B&V 21A-18-07-95\b&v 21a-18-07-95.db  
Dataset Pathname WC/B&V\_21A18--07-95/run1/MIAN  
Dataset Creation Sun Mar 26 15:01:05 2017

### Cement Bond Log Shop Calibration Report

Serial-Model: 12091454-A  
Calibration Performed: Sun Mar 26 08:01:23 2017

### Free Pipe Calibration

	Measured	Units
TT	244.4	uSec
Amplitude	524.7	mV
Log Base Line	2.9	mV

### Calibration References and Gain

Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.2	mV
Amp. Gain	0.156	



Reservoir Monitor Tool I Calibration Report					
Serial-Model:		11917905-A			
Shop Calibration Performed:		Sat Aug 27 14:12:23 2016			
Carbon/Oxygen Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	87.00	80.00	7.00	+/-15.00	V
ITCR2	3097	3250	-153	+/-250	cps
Near Detector					
	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0293	5.38	<6.00
Fe	206	206 +/-2	0.1005	-----	-----
NGAIN = 0.996	NZOFF = 0.5				
Far Detector					
	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0381	5.90	<6.50
Fe	209	208 +/-2	0.0928	-----	-----
FGAIN = 0.990	FZOFF = 0.9				
Flask Temperature	64.9 degF				
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.44	0.45	-0.01	+/-0.02	
LIRI2	1.38	1.36	0.02	+/-0.05	
TCCR2	3970	4000	-30	+/-1000	cps
ITCR2	3128	3200	-72	+/-250	cps
Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	86.00	80.00	6.00	+/-15.00	V
FCAP	10019	10000	19	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.98	0.95	0.03		
N/F Inel Norm	0.64	0.61	0.03		
RNF	1.02	1.07	-0.05	+/-0.12	
RINC	1.57	1.64	-0.07	+/-0.18	
SGFN	24.14	24.00	0.13	+/-0.50	cu
SGFF	22.92	22.85	0.07	+/-0.50	cu
FSIN	24190	24000	190	+/-2000	cps
FCAP	10200	10000	200	+/-1000	cps
NFTR	0.83			<5.00	
FFTR	0.94			<5.00	
NBKG	219			<500	cps
FBKG	103			<500	cps
RTN	0.40	0.40	-0.00	+/-0.10	usec
RTF	0.43	0.40	0.03	+/-0.10	usec
Calibration Software Modules					
HRMTI Module	2015.5.4.0				
RMTI Module	2015.10.16.1				


HRMTI Module2015.5.4.0

RMTI Module2015.10.16.1


Gamma Ray Calibration Report

Type / Serial:002 / 11224502

SHOP CALIBRATION		Mon Feb 27 11:33:38 2017			
Background Calibrator	Counts/Sec.	Gain	Offset	Jig	Units
	29.0				cps
	296.5	1.3758			cps GAPI/cps
PRIMARY VERIFICATION					
Background Calibrator Difference	39.1				cps
	412.9				cps
				373.7	GAPI
BEFORE SURVEY VERIFICATION					
Background Calibrator Difference	0.0				cps
	0.0				cps
				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background Calibrator Difference	0.0				cps
	0.0				cps
				0.0	GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	35.86		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
GR	33.60		TTTCU-002 (11224502) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	37.00
			XHU-003 (11899561) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RmtTFGT RmtTNGT	22.95 22.45		RMTI-A (11917905) Halliburton RMTI Tool	14.00	2.13	77.00



RmtFP5V	14.70		X-OVER-SondexxGo Sondex Box x Go Pin Cross Over	0.31	1.69	1.00
RmtNFwvMcsPI	14.70		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtCommFWa	14.70					
Temp	9.57					
TT3FT	7.32		HCBLM-A (12091454) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	7.32					
WVF5FT	6.36					
WVF3FT	2.84		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
			AUH-001 (11703517) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
LLMTEN	0.00		BUL-001 (000001) Bullnose	0.30	1.69	1.50
Dataset: b&v 21a-18-07-95.db: WC/B&V_21A18--07-95/run1/MIAN Total length: 39.43 ft Total weight: 293.50 lb O.D.: 3.13 in						

Company	URSA OPERATING COMPANY				
Well	B&V 21A-18-07-95				
Field	WILDCAT				
County	Garfield	State	CO		
HALLIBURTON	CEMENT BOND LOG GR-CCL				